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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/579,075	06/21/2007	Hubert Koch	056226.57663US	1578

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EXAMINER
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WALCK, BRIAN D

ART UNIT	PAPER NUMBER
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1736

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/579,075	<b>Applicant(s)</b> KOCH ET AL.	
	<b>Examiner</b> BRIAN WALCK	<b>Art Unit</b> 1736	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2011.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 17,20-23,26-29,31-37 and 40-43 is/are pending in the application.
- 4a) Of the above claim(s) 40-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17,20-23,26-29 and 31-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Status of Claims***

1. Claims 1-16, 18-19, 24, 25, 30, and 38-39 are canceled. Claims 17, 20-23, 26-29, 31-37, and 40-43 are pending where claim 17 has been amended. Claims 40-43 are withdrawn from consideration and claims 17, 20-23, 26-29, and 31-37 remain for examination on the merits.

### ***Status of Previous Rejections***

2. The previous 35 USC § 103 rejections of the claims over Spanjers in view of Tack and Lyle have been withdrawn in view of amendments to the claims.
3. The previous 35 USC § 103 rejections of the claims over Willey in view of Tack have been maintained.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**7. Claims 17, 20-23, 26-29, 31-34, 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 3,619,181 to Willey (cited in previous office action) in view of US 5,620,652 to Tack et al (cited in previous office action).**

Regarding claim 17, Willey discloses a cast aluminum alloy comprising the following composition (Willey, column 1 line 20- column 2 line 23 and column 3 lines 25-33), which overlaps the instantly claimed composition:

Element	Claimed wt%	Willey wt%	Overlap
Mg	3-6	0.5-10	3-6
Si	>1-4	0.3-1.5	>1-4
Sc	0.01-<0.5	0.2-0.6	0.2-<0.5
Ti	0.05-0.15	0.01-0.15	0.05-0.15
Gd	0.001-0.5	~0	Indeterminate
Zn	0-0.05	~0 or 0.5-10	~0

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Zr	0-0.5	0.05-0.25	0.05-0.25
Mn	0-0.15	~0 or 0.15-2.0	~0 or 0.15
Cr	0-0.3	0.05-0.4	0.05-0.3
Cu	0-1.0	0 or 0.5-10	~0 or 0.5-1.0
Fe	0-0.6	0.3-2.0	0.3-0.6
Be	0-0.004	~0	~0
Al	Balance	Balance	Balance

Willey does not explicitly disclose that the alloy contains at least 0.001 wt% Gd.

Tack discloses that the addition of 0.05 to 2.0 wt% Gd provides a positive effect on the  $\text{Al}_3\text{Sc}$  phase in aluminum alloys (Tack, column 14, lines 25-40).

Regarding claim 17, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add 0.05 to 2.0 wt% Gd (overlapping the instantly claimed range of at least 0.001-0.50 wt%) as taught by Tack to the aluminum alloy of Willey. The motivation for doing so is that Tack discloses that the addition of 0.05 to 2.0 wt% Gd provides a positive effect on the  $\text{Al}_3\text{Sc}$  phase in aluminum alloys (Tack, column 14, lines 25-40).

In the case where the claimed ranges “overlap or lie inside ranges disclosed by the prior art” a prima facie case of obviousness exists (see MPEP 2144.05 [R-5]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected values for the composition of each element that lie within the

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instantly claimed ranges because Willey discloses the same utility throughout the disclosed ranges.

Regarding claims 20-23, 26, 27, 31-34, 36 and 37, the alloy of Willey overlaps the additional compositional limitations of instant claims 20-27, 31-34, 36 and 37.

Regarding claims 28-29, Willey discloses that the alloy can contain 0.05-0.25 wt% vanadium (Willey, column 1 line 20- column 2 line 23), overlapping the instantly claimed vanadium content ranges.

**8. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over US 3,619,181 to Willey (cited in previous office action) in view of US 5,620,652 to Tack et al (cited in previous office action) as applied to claims 17, 20-23, 26-29, 31-34, and 36-39 above and further in view of the article titled "Aluminum and Aluminum Alloys" by Sanders et al from the Kirk-Othmer Encyclopedia of Chemical Technology (cited in previous office action).**

Regarding claim 35, Willey in view of Tack discloses an alloy as referenced above. Willey states that the addition of zinc to the alloy is optional. However, if zinc is not added to the alloy of Willey, Sanders discloses that zinc still is present in aluminum alloys as a trace impurity at levels below 100 ppm (Sanders, page 305, "11. Aluminum Alloys") which overlaps the instantly claimed range of 0.001-0.05 weight percent zinc. In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists (see MPEP 2144.05 [R-5]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have selected values for the composition of each element that lie within the instantly

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claimed ranges because Spanjers in view of Tack discloses the same utility throughout the disclosed ranges.

### ***Response to Arguments***

9. Applicant's arguments filed 4/27/2011 have been fully considered but they are not persuasive.

Applicant argues that the alloy of Willey is not cast and is instead wrought, and that Willey only discloses wrought alloys. This is not found persuasive because Willey does not state that the alloy is limited to wrought alloys and Willey has examples of alloys which are as-cast or as-cast and aged (Willey, column 3 lines 25-33).

### ***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRIAN WALCK whose telephone number is (571)270-5905. The examiner can normally be reached on Monday-Friday 9 AM-6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571)272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brian Walck/  
Examiner, Art Unit 1736

/John P. Sheehan/  
Primary Examiner, Art Unit 1736